

MUREP Precollege Summer Institute (MUREP PSI) Awards – FY2023

Title: Artificial Intelligence Study in Earth Exploration Summer Academy

Institution: Clayton State University

City/State: Morrow, Georgia

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FY: 2023

Summary:

The high demands of the U.S. national workforce for diversity have made it critical to inspire underrepresented/underserved high school students to increase interest and pursue careers in STEM fields. It is important to build pathways to expose high school students to STEM fields, help them understand STEM opportunities, and support them to transition from high school to college for STEM degree programs.

To inspire underrepresented high school students to involve in STEM fields study and develop their readiness for studying STEM in college, we propose to host a NASA themed summer program, Artificial Intelligence Study in Earth Exploration (AISEE) Summer Academy for minority high school students. This program will provide an 8-day summer residential NASA STEM camp exposing the participants to college life, NASA research, earth data and AI. The program will collaborate with other researchers to promote NASA STEM to the participants. The target participants of the summer academy are 10, 11 or 12 grade minority high school students. Activities of the camp are designed to align with the goals and objectives of NASA MUREP PSI specified in EON 2023 Appendix 9. Participants will understand NASA's mission and the importance of STEM in NASA and learn how to apply AI technology to solve real-world problems in earth science. Daily STEM engagement activities include Earth data exploration, data retrieval, python programming, data preprocessing, data mining and modeling, and artificial intelligence. Two advanced placement modules, Earth Ecosystem Animation and Earth Ecosystem Simulation, are designed for returning students to advance their study in earth exploration. A cultivating event will be held at the end of the program. Collaborators will engage with students by giving lectures and demonstrating opportunities in NASA earth science and other professional careers.

This proposed summer academy will provide underserved minority high school students an opportunity to experience college life and learn how college students study and live daily. The activities will be delivered exactly in the manner of a college class, which will help the participants develop readiness for college study.

The proposed program will create opportunities for underrepresented high school students to interact in an environment that emphasizes state-of-the-art engagement and practices in AI and earth exploration leading to enhancement of interest and knowledge in computing, AI and earth science, which then inspire the participants to choose STEM as the focused field of study and as a career after college.

The project will be evaluated for successful completion using evidence-based evaluation methods by collecting and analyzing data based on pre-/post- program survey, pre-/post- activity survey, participants' feedback, and other evidence-based evaluations.